

PROCEEDINGS
OF THE
UNITED STATES NATIONAL MUSEUM.
1882.

INFORMATION CONCERNING SOME FOSSIL TREES IN THE UNITED STATES NATIONAL MUSEUM.

By Lieut. Col. P. T. SWAINE, U. S. A., and Lieut. J. T. C. HEGEWALD, U. S. A.

[Letter to General William T. Sherman.]

SIR: I have the honor to furnish you the following information with regard to the two fossil trees procured from "Lithodendron" at the request of Lieut. Col. P. T. Swaine, Fifteenth Infantry:

On or about the middle of May, 1879, the honor was conferred upon me to carry out written instructions received from General Sherman, with regard to procuring several specimens of fossil trees from "Lithodendron" for the National Museum. A sergeant, ten men, and two drivers, rationed for twelve days, with teams and two heavy stone wagons, were ordered to accompany me on the expedition, taking with them such tools as would be necessary to procure and handle the specimens. We made the usual drives, stopping at a forage agency each night until we arrived at Navajoe Springs, Arizona.

The country passed over was very dry and dusty, though the road was in good condition, being the regular mail route to Prescott.

At Navajoe Springs we left the road, cutting diagonally across the country about 20 miles, arriving at Bear Spring near the head of Lithodendron in the evening. We had to cross several arroyas, but being in the dry season, we had nothing to fear from water or marshy soil. The country traversed was desolate and barren, sage-brush and pinon trees abounding, good grazing and water being very scarce. Here and there mountain peaks stood out in bold relief like great sign-posts to guide the traveler on his way. The water, when found, was in small quantities and alkaline.

Near the head of Lithodendron, and about Bear Spring, grazing was good, the Navajoes having thousands of heads of sheep there which they drove to the spring every morning and evening; being always on the *qui vive* for news, they thought it strange the "Great Father in

Washington" should want some of the bones of the "Great Giant" their forefathers had killed years ago when taking possession of the country, the *lava beds* being the remains of the blood that ran from his wounds.

Camping at Bear Spring, I turned the mules out to graze and left the men to prepare an early dinner whilst I rode down the valley to examine the thousands of specimens that lay scattered on each side of the valley along the slopes, which were perhaps 50 feet high; the valley of the Lithodendron, at its widest part, being scarcely a half mile. Along the slopes no vegetation whatever was to be seen, wood being very scarce; the soil was composed of clay and sand mostly, and these petrifications, broken into millions of pieces, lay scattered all adown these slopes. Some of the large fossil trees were well preserved, though the action of the heat and cold had broken most of them in sections from 2 to 10 feet long, and some of these must have been immense trees; measuring the exposed parts of several they varied from 150 to 200 feet in length, and from 2 to 4½ feet in diameter, the centers often containing most beautiful quartz crystals.

I encountered considerable difficulty in trying to procure two specimens answering to the General's description, and which I thought would please. After finding the larger of the two fossils sent, I could find no mate, the remainder being of a different species, and the exposed part broken in segments too short to answer. Finally, I concluded to unearth part of the same specimen, which entered the ground at an angle of about 20°.

Bringing back men and teams, I dug along some 30 feet, finding the second dark specimen, which made a good match, and which saw the light, perhaps, for the first time for ages, though both were parts of the same tree. This was on the right bank or slope of Lithodendron, one mile and a quarter from Bear Spring. I got both fossils loaded on the wagons, and camped at the Spring that night.

Next morning we left quite early, encountering some difficulty in getting over the rough country, frequently stopping to make a road to get on a mesa or over some arroya; late the same evening we arrived at Navajoe Springs.

From here we encountered no further difficulties. Arriving at the post I reported my return and the result of the expedition. (The post was Fort Wingate, N. Mex.)

These specimens remained at the post until Colonel Bull, in September, 1879, had them boxed up and sent to Santa Fé, New Mexico. From there they were shipped east to Washington, I believe.

Very respectfully, your most obedient servant,

J. T. C. HEGEWALD,

(Late) Second Lieutenant, Fifteenth Infantry.

NEW ALBANY, IND.,

September 21, 1881.

HISTORY OF THE TWO SPECIMENS OF FOSSIL TREES IN THE SMITHSONIAN INSTITUTION, WASHINGTON, D. C.

The General of the Army, General W. T. Sherman, while on a tour across the continent in the fall of 1878, suggested to Lieut. Col. P. T. Swaine, Fifteenth United States Infantry, then in command of the post of Fort Wingate, N. Mex., the expediency of procuring two of the petrifications of the country in that vicinity of reasonable dimensions for transportation, yet sufficiently large to be worthy of a place in the Smithsonian Institution. Acting upon this suggestion, an expedition was organized early in the spring of 1879 to proceed to the Lithodendron (stone trees) in Arizona. Thomas V. Kearns, a gentleman of long residence in that part of the country, and familiar with the locality to be explored, kindly volunteered his services, and success was, in a great measure, due to his efforts in carrying out the wishes of the General. The military detail consisted of Second Lieut. J. T. C. Hegewald, one sergeant, and twelve soldiers, all of the Fifteenth United States Infantry, and the party was well supplied with army wagon running gears specially arranged for hauling stone, and with tools and appliances complete. Lieutenant Hegewald has furnished a detailed and comprehensive statement of the events connected with this expedition, which is interesting as an appendix to this paper.

Only one of the two specimens obtained from the Lithodendron by Mr. Kearns and Lieutenant Hegewald was forwarded to Washington. This is the large dark-colored one. In the place of the second one brought in from the locality of the Lithodendron a better specimen was found on the Mesa to the north of and adjacent to Fort Wingate, about two miles from the flag-staff. This is the smaller and lighter colored one.

First. Lieut. S. R. Stafford, regimental quartermaster, Fifteenth United States Infantry, had a strong platform made of plank spiked together, and rolled each fossil on separately, fastening them in place with strap iron, and hauled them to Santa Fé, N. Mex., where they were detained in the government corral awaiting the collection of enough other curiosities to make up a car load, when they were shipped to Washington under the direction and care of agents of the Smithsonian.

P. T. SWAINE,

Lieutenant-Colonel Fifteenth Infantry, Brevet Colonel, U. S. A.

A STUDY OF THE PHRONIMIDÆ OF THE NORTH PACIFIC SURVEYING EXPEDITION.

By THOS. H. STREETS, M. D., U. S. N.

The identification of the *Phronima* has been attended with difficulty on account of the absence of properly-defined characters. Claus, who gives the most detailed account of them, combines in his description of *P. sedentaria* more than one species. I have had no opportunity to examine *P. sedentaria*. The following article is the result of close